

**THAMES YOUNG MARINERS,
RIVERSIDE DR, LONDON**

**DUSK EMERGENCE AND
DAWN RE-ENTRY BAT SURVEYS**

A Report to: Pick Everard

Report No: RT-MME-158098

Date: September 2022



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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development".

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	29/09/2022	Beth Stacey MSc (Ecological Project Officer)	Will Rees MSc (Senior Ecological Consultant)	Paul Roebuck MSc MCIEEM (South-East Manager)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In August 2022, Pick Everard commissioned Middlemarch Environmental Ltd to undertake a dusk emergence bat surveys at Thames Young Mariners, Richmond, London. This assessment is required to inform a planning application associated with the demolition of the existing structures on site to facilitate the construction of new accommodation and facilities.

Dusk emergence and dawn re-entry surveys were undertaken on the 16th August 2022.

Five bat species were recorded during the dusk emergence survey; common pipistrelle, noctule, serotine, Leisler's bat and soprano pipistrelle. No bats were observed emerging from any of the buildings on site. Throughout the survey near continuous bat foraging was observed over the lake peaking in the later stages of the survey. Bats were observed commuting to the lake from adjacent boundary habitats and it is considered likely that the wider site supports roosts within woodland and scattered tree habitats.

It is concluded that the lake provides high-quality foraging habitat with value to bat populations in both the immediate and wider landscape.

Given that no bats emerged from any of the buildings, it is concluded that the proposed demotion of the structures will not impact upon roosting bats.

The wider site provides high-quality foraging, commuting and roosting habitat. Proposals have been sensitively designed to retain and protect the existing value of the site, including trees with bat roosting potential, woodland habitat and the lake itself. Proposals will include the installation of additional floating pontoons within the lake and a rope bridge. The features should be designed to ensure bat flight paths over the lake are not restricted. All lighting across the site must be sensitively managed to avoid creating spill on the high-quality bat habitat.

Proposals include a series of site enhancements, including the installation of bat boxes and linear features to improve the commuting and foraging routes for bats along the site boundaries. It is therefore considered that the proposed development will enhance the value of the site to bats as long as the proposed lake activity features and artificial lighting are sensitively designed.

R1 Buildings B1, B2, B3, B4 and B5

Buildings B1, B2, B3, B4 and B5 have been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), and no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed building have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the buildings or trees in the interim. In the unlikely event that a bat is found during site works all works in that area must immediately cease and a suitably qualified ecologist should be contacted.

R2 Rope Bridge and Lighting

The proposed rope bridge should be sensitively designed to ensure bat flight paths are not obstructed.

In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018; Gunnell et al, 2012), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species.

CONTENTS

1. INTRODUCTION	4
1.1 PROJECT BACKGROUND	4
1.2 SITE DESCRIPTION AND CONTEXT	4
1.3 DOCUMENTATION PROVIDED	5
2. METHODOLOGY	6
2.1 DESK STUDY	6
2.2 FIELD SURVEYS	6
2.2.1 Overview of Dusk Emergence Survey	6
2.2.2 Dusk Emergence Bat Survey	6
3. DESK STUDY	7
3.1 STATUTORY NATURE CONSERVATION SITES	7
4. SURVEY RESULTS	8
4.1 FIRST DUSK EMERGENCE SURVEY	8
5. DISCUSSIONS AND CONCLUSIONS	10
5.1 DISCUSSION	10
5.1.1 Summary of Proposals	10
5.1.2 Summary of Dusk Emergence Survey	10
5.2 CONCLUSIONS	10
6. RECOMMENDATIONS	11
7. DRAWINGS	12
REFERENCES AND BIBLIOGRAPHY	14
APPENDIX 1	15

1. INTRODUCTION

1.1 PROJECT BACKGROUND

In August 2022, Pick Everard commissioned Middlemarch Environmental Ltd to undertake a dusk emergence bat surveys at Thames Young Mariners, Richmond, London. This assessment is required to inform a planning application associated with the demolition of the existing structures on site to facilitate the construction of new accommodation and facilities.

Middlemarch Environmental Ltd has previously carried the following assessments on site:

- Preliminary Arboricultural Appraisal (RT-MME-157100-01);
- Arboricultural Impact Assessment (RT-MME-157100-02);
- Ecological Walkover Survey (RT-MME-157100-03);
- Preliminary Bat Roost Assessment (RT-MME-157100-04);
- Badger Survey (RT-MME-157100-05); and,
- Biodiversity Net Gain Assessment (RT-MME-157100-06).

During the Preliminary Bat Roost Assessment, Buildings 1, 2, 3, 4 and 5 were assessed as having low potential to support roosting bats, due to the presence of numerous features such as lifted roofing felt, damaged wooden cladding, and loose-fitting joins which could provide suitable habitat for a small number of bats to use opportunistically.

Therefore, a single dusk emergence bat surveys was recommended for the buildings on site proposed for demolition to confirm presence/absence of roosting bats. This report details the results of the survey undertaken on the 16th August 2022.

A total of 13 trees (T2, T69, T70, T71, T87, T139, T140, T141, T160, T162, T163, T247 and T248) were identified as having high potential. 6 trees (T93, T96, T97, T98, T249 and T250) were assessed as having moderate potential to support roosting bats. Potential roost features identified in the trees on site included loose bark, knot holes, tear outs, woodpecker holes, dense ivy and deadwood cavities. The remaining trees on site lacked any potential roost features likely to support bats or were generally of insufficient size and age to support roosting features and were therefore assessed as having low/negligible potential to support roosting bats. All trees with bat roosting potential have been retained and protected as part of the proposed development, therefore no further survey effort is required.

All UK bat species are legally protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1. This section also provides some brief information on the ecology of British bat species.

1.2 SITE DESCRIPTION AND CONTEXT

The development site is situated in the London Borough of Richmond, centred at National Grid Reference TQ 16397 72304. The site comprised the Thames Young Mariners Outdoor Learning Facilities with associated facilities and soft landscaping.

The central portion of the site was dominated by a large lake fed from backwater from the River Thames channel. The lake was fringed by a range of semi-natural habitats and a series of docks and pontoons. Site facilities were predominantly located within the south-western portion of the site, comprising a series of buildings, with associated storage units and hardstanding. The area to the south of the lake comprised an access road, managed amenity grassland with scattered trees and narrow bands of woodland used for amenity purposes. The north-eastern portion of the site comprises woodland habitat which forms part of a larger offsite band of woodland with reduced amenity pressure. The north-western portion of the site comprises an area of previously cleared land which has subsequently been colonised by mixed scrub habitat.

Ham Lands, a 72 ha Local Nature Reserve with broadleaf woodland, scattered scrub, meadow grassland and wetland habitats, is situated immediately north and south of the site. The River Thames is located immediately west of the site boundary. Riverside Dr. abuts at the eastern site boundary. The broader surrounding area consists of a mixture of residential housing and parkland. St Marys University Park and

Playing Grounds, comprised of scattered tree and amenity grassland, is situated approximately 700 m west. Grey Court School is situated approximately 674 m east of the site and features playing grounds with vegetated margins.

Richmond Park, a 1011.7 ha area comprised of broadleaf woodland, lowland acidic grassland and standing water habitats, is situated approximately 2.25 km east. Bushy Park, a 445 ha area of mixed woodland and grassland, is situated 1.9 km south west of the sites bounds.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Site Layout - 211263_220207	Pick Everard

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

The desk study included a search for statutory nature conservation sites designated for bats within a 10 km radius of the site.

2.2 FIELD SURVEYS

2.2.1 Overview of Dusk Emergence Survey

Building's 1, 2, 3, 4, and 5 were classed as having low potential to support roosting bats during the daytime survey. In line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), a single dusk emergence survey was carried out on the 16th of August 2022.

2.2.2 Dusk Emergence Bat Survey

In line with the specifications detailed in Bat Surveys: Good Practice Guidelines (Collins, 2016), the dusk surveys commenced 20 minutes prior to sunset and continued until 120 minutes after sunset. The dusk emergence surveys were conducted using electronic bat detectors (Echo Meter Touch 2 and Bat Box Duet with associated recording devices) to facilitate the detection of bats and to aid in the determination of species of bat using the site. Subsequent computer analysis of recordings allowed all species of bat using the site to be identified.

3. DESK STUDY

3.1 STATUTORY NATURE CONSERVATION SITES

The site is not located within 10 km of any statutory nature conservation sites designated for the presence of bats.

4. SURVEY RESULTS

4.1 FIRST DUSK EMERGENCE SURVEY

The dusk emergence survey was undertaken on 16th August 2022 by Jamie Fletcher (Principal Ecological Consultant), Will Rees (Senior Ecological Consultant), Harry Stone (Ecological Consultant), Amelia Collins (Ecological Project Officer), Beth Stacey (Ecological Project Officer), Zeina Farhat (Ecological Project Officer), Meg Cookson (Ecological Field Officer) and Ben Huxley (Ecological Field Officer). The weather conditions recorded at the time of the survey are detailed in Table 4.1.

Parameter	Conditions	
	Start	Finish
Temperature (°C)	20	18
Cloud Cover (%)	30	30
Precipitation	Nil	Nil
Wind Speed (Beaufort)	F1	F0

Table 4.1: Weather Conditions During Dusk Emergence Survey

The dusk emergence survey commenced 20 minutes prior to sunset and continued until 120 minutes after sunset. Sunset was at 20:22 hrs (BBC Weather Centre Data for Richmond). Five species of bat, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, Lesiler's bat *Nyctalus leisleri*, Soprano pipistrelle *Pipistrellus pygmaeus*, and Serotine *Eptesicus serotinus* were recorded during the survey. Survey results are plotted on Drawing C158089-01 in Chapter 7.

Noctule

At 20:43 (21 minutes after sunset) several noctule bats were detected but not seen. At 21:00 (38 minutes after sunset) a noctule was recorded foraging over the lake north of Building 1. A noctule was also recorded foraging at 21:24 (1 hour 2 minutes after sunset). These bats were not observed emerging from any features associated with the site.

Common pipistrelle

The first common pipistrelle was detected at 20:59 (37 minutes after sunset), the bat was heard but not seen visually by surveyors. At 21:12 (50 minutes after sunset) a common pipistrelle was recorded commuting northwards, passing to the west of Building 4 towards the lake. At 21:13 (51 minutes after sunset), a common pipistrelle was recorded foraging around the garden of Building 5 and in the area of grassland eastward. From 21:17 onwards constant foraging was observed over the lake to the west of the buildings from up to 4 individuals.

No common pipistrelles were observed emerging from any of the buildings on site.

Soprano pipistrelle

At 20:58 (36 minutes after sunset) a soprano pipistrelle was recorded commuting from the east and foraging over grassland to the east of the buildings. At 21:01 (39 minutes after sunset) a soprano pipistrelle was recorded foraging over the area of grassland east of Building 5. From 21:07 (45 minutes after sunset) until 21:41 (1 hour 19 minutes after sunset) occasional foraging and commuting passes were recorded to the north and east of Building 3 and over the garden of Building 5. From 21:20 until the end of the survey constant foraging was recorded over the lake from approximately 8 individual bats.

No soprano pipistrelles were observed emerging from the buildings on site.

Leisler's bat

At 20:52 (30 minutes after sunset) a Leisler's bat was detected foraging over the northern edge of the lake. The foraging continued until the end of the survey.

No Leisler's bats were observed emerging from the buildings on site.

Serotine

At 20:56 (34 minutes after sunset) a serotine was recorded foraging over the lake to the west of Building 1 for 2 minutes. Between 21:00 (38 minutes after sunset) and 21:04, further individual bat foraging passes were recorded over the lake.

No serotine bats were observed emerging from the buildings on site.

No other species of bat were detected or observed during this survey. Analysis of the sound recordings did not detect any further species of bat.

5. DISCUSSIONS AND CONCLUSIONS

5.1 DISCUSSION

5.1.1 Summary of Proposals

The proposed works include to demolition of the existing buildings and facilities within the site and erect a series of buildings to provide new guest accommodation and associated facilities. The majority of the works will take place within the existing building footprint, however, small areas of amenity grassland, introduced shrub are to be lost to facilitate the wider development. Proposals have been designed to retain all trees with bat roosting potential and all notable habitats within the site. As compensation for small scale habitat losses, significant additional habitat creation is proposed, including a series of features specifically targeting biodiversity enhancement.

5.1.2 Summary of Dusk Emergence Survey

Dusk Emergence Survey

Five bat species were recorded during the dusk emergence surveys; common pipistrelle, noctule, serotine, Leisler's noctule and soprano pipistrelle. Commuting and foraging activity primarily occurred over the area of grassland east of Building 5 and over the lake north and west of Building 1.

No bats were observed emerging from any of the buildings on site.

Throughout the survey near continuous foraging was observed over the lake from a five species of bats in good numbers. The bats were observed commuting to the lake from adjacent boundary habitats and it is considered likely that the wider site supports roosts within woodland and scattered tree habitats.

It is concluded that the lake provides high-quality foraging habitat with value to bat populations in both the immediate and wider landscape.

5.2 CONCLUSIONS

Given that no bats emerged from any of the buildings recorded on site during the surveys, it is concluded that there are no bat roosts present in the buildings on site. Therefore, the proposed works are not expected to result in the direct impacts to roosting bats, and as such the proposed works may proceed as scheduled.

The wider site provides high-quality foraging, commuting and roosting habitat. Proposals have been sensitively designed to retain and protect the existing value of the site, including trees with bat roosting potential, woodland habitat and the lake itself. Proposals will include the installation of additional floating pontoons within the lake and a rope bridge. The features should be designed to ensure bat flight paths over the lake are not restricted. All lighting across the site must be sensitively managed to avoid creating spill on the high-quality bat habitat.

Proposals include a series of site enhancements, including the installation of bat boxes and linear features to improve the commuting and foraging routes for bats along the site boundaries. It is therefore considered that the proposed development will enhance the value of the site to bats as long as the proposed lake activity features and artificial lighting are sensitively designed.

Recommendations to this effect have been made in Chapter 6.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 Buildings B1, B2, B3, B4 and B5

Buildings B1, B2, B3, B4 and B5 have been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), and no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed building have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the buildings or trees in the interim. Updated Preliminary Bat Roost Assessments can be undertaken at any time of year. Updated surveys requiring nocturnal or dawn assessment will need to adhere to the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) with the surveys undertaken between April and September inclusive. In the unlikely event that a bat is found during site works all works in that area must immediately cease and a suitably qualified ecologist should be contacted.

R2 Rope Bridge and Lighting

The proposed rope bridge should be sensitively designed to ensure bat flight paths are not obstructed.

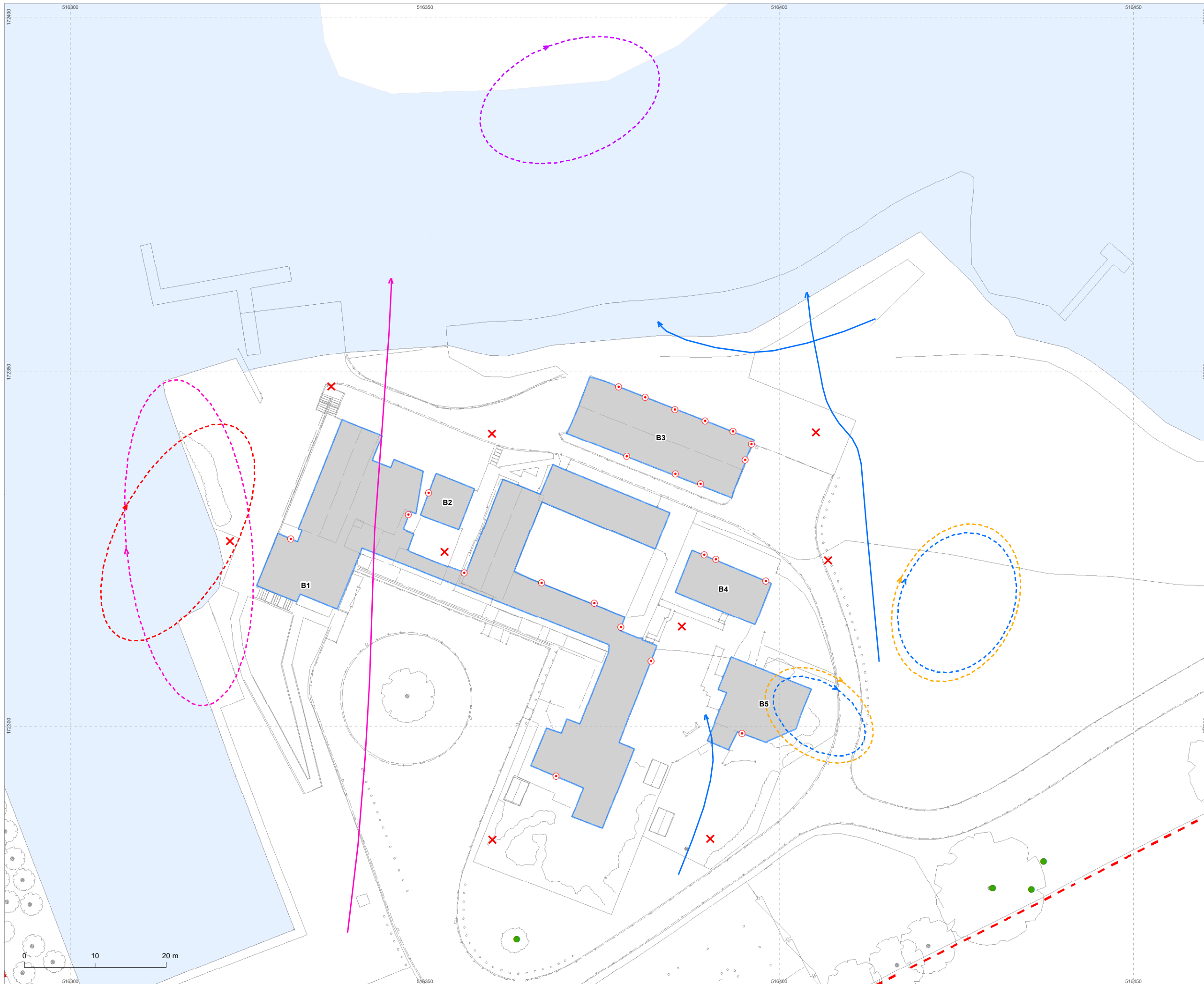
In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018; Gunnell et al, 2012), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species.

In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018; Gunnell et al, 2012), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species. Examples of good practice include:

- Avoiding the installation of new lighting in proximity to key ecological features, such as lake, boundary, scattered trees, woodland edges and site boundaries.
- Using modern LED fittings rather than metal halide or sodium fittings, as modern LEDs emit negligible UV radiation.
- The use of directional lighting to reduce light spill, e.g. by installing bespoke fittings or using hoods or shields. For example, downlighting can be used to illuminate features such as footpaths whilst reducing the horizontal and vertical spill of light.
- Where the use of bollard lighting is proposed, columns should be designed to reduce horizontal light spill.
- Implementing controls to ensure lighting is only active when needed, e.g. the use of timers or motion sensors.
- Use of floor surface materials with low reflective quality. This will ensure that bats using the site and surrounding area are not affected by reflected illumination.
- For internal lights, recessed light fittings cause significantly less glare than pendant type fittings. The use of low-glare glass may also be appropriate where internal lighting has the potential to influence sensitive ecological receptors.

7. DRAWINGS

Drawing C158089-01 – Dusk Emergence Survey



C158089-01

Legend

- - - Site boundary
 - X Surveyor location
 - - - Common pipistrelle foraging
 - Leisler's bat commuting
 - - - Leisler's bat foraging
 - - - Noctule foraging
 - - - Serotina foraging
 - Soprano pipistrelle commuting
 - - - Soprano pipistrelle foraging
- Preliminary Roost Assessment:**
- Tree with low/negligible bat roost potential
 - Potential bat roosting feature
 - Building with low bat roost potential

Project		Thames Young Mariners, Richmond, London	
Drawing		Dusk Emergence Survey (16/08/2022)	
Client		Pick Everard	
Drawing Number	C158089-01	Revision	00
Scale @ A3	1:500	Date	September 2022
Approved By	BS	Drawn By	GT/CD



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APPENDIX 1

LEGISLATION

Bats and the places they use for shelter or protection (i.e. roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CRoW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The reader should refer to the original legislation for the definitive interpretation.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*. Species of Principal Importance for Nature Conservation in England are material considerations in the planning process. The list of species is derived from Section 41 list of the Natural Environment and Rural Communities (NERC) Act 2006.

ECOLOGY

At present, 18 species of bats are known to live within the United Kingdom, of which 17 species are confirmed as breeding. All UK bat species are classed as insectivorous, feeding on a variety of invertebrates including midges, mosquitoes, lacewings, moths, beetles and small spiders.

Bats will roost within a variety of different roosting locations, included houses, farm buildings, churches, bridges, walls, trees, culverts, caves and tunnels. At different times of the year the bats roosting requirements alter and they can have different roosting locations for maternity roosts, mating roosts and hibernation roosts. Certain bat species will also change roosts throughout the bat activity season with the bat colony using the site to roost for a few days, abandoning the roost and then returning a few days or weeks later. This change can be for a variety of reasons including climatic conditions and prey availability. Bats are known live for several years and if the climatic conditions are unfavourable at a particular roost, they may abandon it for a number of years, before returning when conditions change. Due to the matriarchal nature of bat colonies, the locations of these roosts can be passed down through the generations.

Bats usually start to come out of hibernation in March and early April (weather dependent), when they start to forage and replenish the body weight lost during the hibernation period. The female bats then start to congregate together in maternity roosts prior to giving birth and a single baby is born in June or July. The female then works hard to feed her young so that they can become independent and of a sufficient weight to survive the winter before the weather gets too cold and invertebrate activity reduces. Males generally live solitary lives, or in small groups with other males, although in some species the males can be found living with the females all year. The mating season begins in the autumn. During the winter bats hibernate in safe locations which provide relatively constant conditions, although they may venture outside to forage on warmer winter nights.